

*Trees add beauty and so much more.*

## In your backyard

Trees in your backyard can be home to many different types of wildlife. Trees can also reduce your heating and cooling costs, help clean the air, add beauty and color, provide shelter from the wind and the sun, and add value to your home.

## Choosing a tree

Choosing a tree should be a well thought-out decision. Tree planting can be a significant investment in money and time. Proper selection can provide you with years of enjoyment as well as significantly increase the value of your property. An inappropriate tree for your property can be a constant maintenance problem or even a hazard. Before you buy, take advantage of the abundant references on gardening at local libraries, universities, arboreturns, parks where trees are identified, native plant and gardening clubs, and nurseries. Some questions to consider in selecting a tree include:

*Select trees for your backyard that will add beauty and help you achieve the diversity you want.*

*Backyard  
Conservation*

**is a cooperative project of:**

**USDA Natural Resources  
Conservation Service  
National Association of  
Conservation Districts  
Wildlife Habitat Council**

April 1998

1. What purpose will this tree serve?  
Trees can serve numerous landscape functions including beautification,

screening of sights and sounds, shade and energy conservation, and wildlife habitat.



The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD). To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call (202) 720-5964 (voice or TDD). USDA is an equal opportunity provider and employer.

**One in a series of 10 tip sheets on backyard conservation**

2. Is the species appropriate for your area? Reliable nurseries will not sell plant material that is not suitable for your area. However, some mass marketers have trees and shrubs that are not winter hardy in the area sold. Even if a tree is hardy, it may not flower consistently from year to year at the limits of its useful range due to late spring freezes. If you are buying a tree for the spring flowers and fall fruits, this may be a consideration. In warmer climates, there may not be a long enough period of cool temperatures for some species, such as apples, to develop flowers. Apples and other species undergo vernalization—a period of near-freezing temperatures that cause changes in the plant, resulting in the production of flowers.

Be aware of microclimates. Microclimates are very localized areas where weather conditions may vary from the norm. A very sheltered yard may support vegetation not normally adapted to the region. On the other hand, a north-facing slope may be significantly cooler or windier than surrounding areas and survival of normally adapted plants may be limited.

Select trees native to your area. They will be more tolerant of local weather and soil conditions, enhance natural biodiversity in your neighborhood, and be more beneficial to wildlife than many non-native trees. Avoid exotic trees that can invade other areas, crowd out native plants, and harm natural ecosystems.

3. How big will it get? When planting a small tree, it is often difficult to imagine that in 20 years it could be shading your entire yard. Unfortunately, many trees are planted and later removed when the tree grows beyond the dimensions of the property.

4. What is the average life expectancy of the tree? Some trees can live for hundreds of years. Others are considered “short-lived” and may live for only 20 or 30 years. Many short-lived trees tend to be smaller ornamental species. Short-lived species should not necessarily be ruled out when considering plantings. They may have other desirable characteristics, such as size, shape, tolerance of shade, or fruit, that would be useful in the landscape. These species may also fill a void in a young landscape, and can be removed as other larger, longer-lived species mature.

5. Does it have any particular ornamental value such as leaf color or flowers and fruits? Some species provide beautiful displays of color for short periods in the spring or fall. Other species may have foliage that is reddish or variegated and can add color in your landscaping year round.

Trees bearing fruits or nuts can provide an excellent source of food for many species of wildlife. However, some people consider some fruit and nut bearing trees to be “dirty.”

6. Does it have any particular insect, disease, or other problem that may reduce its usefulness? Certain insects and diseases can be serious problems on some desirable species in some regions. Depending on the pest, control of the problem may be difficult and the pest may significantly reduce the attractiveness, if not the life expectancy, of the plant. Other species such as the silver maple (*Acer saccharum*) are known to have weak wood that is susceptible to damage in ice storms or heavy winds.

7. How common is this species in your neighborhood or town? Some species are over-planted. Increasing the natural diversity will provide

habitat for wildlife and help limit the opportunity for a single pest to destroy all plantings. An excellent example of this was the American elm (*Ulmus americana*). This lovely tree was widely planted throughout the United States. With the introduction of Dutch elm disease, thousands of communities lost all their street trees in only a few years.

8. Is the tree evergreen or deciduous? Evergreen trees will provide cover and shade year round. They may also be more effective as a barrier for wind and noise. Deciduous trees will give you summer shade but allow the winter sun to shine in. This may be a consideration for where to place the tree in your yard.

## **Placement of trees**

Proper placement of trees is critical for your enjoyment and their long-term survival. Check with local authorities about regulations pertaining to placement of trees. Some communities have ordinances restricting placement of trees within a specified distance of a street, sidewalk, street-light, or other utilities.

Before planting your tree, consider the tree's ultimate size. When the tree nears maturity, will it be too near your house or other structures? Be considerate of your neighbors. An evergreen tree planted on your north side may block the winter sun from your next door neighbor. Will it provide too much shade for your vegetable and flower gardens? Most vegetables and many flowers require considerable amounts of sun. If you intend to grow these plants, consider how the placement of trees will affect these gardens. Will it obstruct driveways or sidewalks? Will it cause problems for buried or overhead utilities?



## Planting a tree

A properly planted and maintained tree will grow faster and live longer than one that is incorrectly planted. Trees can be planted almost any time of the year as long as the ground is not frozen. Late summer or early fall is the optimum time to plant trees in many areas. This gives the tree a chance to establish new roots before winter arrives and the ground freezes. When spring arrives, the tree is ready to grow. The second choice for planting is late winter or early spring. Planting in hot summer weather should be avoided. Planting in frozen soil during the winter is difficult and tough on tree roots. When the tree is dormant and the ground is frozen, there is no opportunity for the growth of new roots.

Trees are purchased as container grown, balled and burlapped (B&B), and bare root. Generally, container grown are the easiest to plant and successfully establish in any season, including summer. With container grown stock, the plant has been growing in a container for a period of time. When planting container grown plants, little damage is done to the roots as the plant is transferred to the soil. Container grown trees range in size from very small plants in gallon pots up to large trees in huge pots. B&B plants frequently have been dug from a nursery, wrapped in burlap, and kept in the nursery for an additional period of time, giving the roots opportunity to regenerate. B&B plants can be quite large. Bare root trees are usually extremely small plants. Because there is no soil on the roots, they must be planted when they are dormant to avoid drying out. The roots must be kept moist until planted. Frequently, bare root trees are offered by seed and nursery mail

order catalogs or in the wholesale trade. Many state operated nurseries and local conservation districts also sell bare root stock in bulk quantities for only a few cents per plant. Bare root plants usually are offered in the early spring and should be planted as soon as possible upon arrival.



*Rules of thumb for planting a balled and burlapped tree:*

- 1) Dig a hole twice as wide as, and slightly shallower than, the rootball. Remove the string or wire holding the burlap to the root ball, and gently place the ball in the hole. 2) Fill with soil, lightly tamping the soil to collapse air pockets. 3) Finish by forming a temporary water basin around the tree; water and mulch an area about 3 feet in diameter.

Carefully follow the planting instructions that come with your tree. If specific instructions are not available, follow these tips:

1. BEFORE DIGGING, call your local utilities to identify the location of any underground utilities.
2. Dig a hole twice as wide as, and slightly shallower than, the root ball. Roughen the sides and bottom of the hole with a pick or shovel so that roots can penetrate the soil.
3. With a potted tree, gently remove the tree from the container. Lay the tree on its side with the container end near the planting hole. Hit the bottom and sides of the container until the root ball is loosened. If roots are growing in a circular pattern around the root ball, slice through the roots on a couple of

sides of the root ball. With trees wrapped in burlap, remove the string or wire that holds the burlap to the root crown. It is unnecessary to completely remove the burlap. Plastic wraps must be completely removed. Gently separate circling roots on the root ball. Shorten

exceptionally long roots, and guide the shortened roots downward and outward. Root tips die quickly when exposed to light and air, so don't waste time.

4. Place the root ball in the hole. Leave the top of the root ball (where the roots end and the trunk begins)  $\frac{1}{2}$  to 1 inch above the surrounding soil, making sure not to cover it unless roots are exposed. For bare root plants, make a mound of soil in the middle of the hole and spread plant roots out evenly over mound. Do not set trees too deep. As you add soil to fill in around the tree, lightly tamp the soil to collapse air pockets, or add water to help

settle the soil. Form a temporary water basin around the base of the tree to encourage water penetration, and water thoroughly after planting. A tree with a dry root ball cannot absorb water; if the root ball is extremely dry, allow water to trickle into the soil by placing the hose at the trunk of the tree.

5. Mulch around the tree. A 3-foot diameter circle of mulch is common.

6. Depending on the size of the tree and the site conditions, staking may be beneficial. Staking supports the tree until the roots are well established to properly anchor it. Staking should allow for some movement of the tree. After trees are established, remove all support wires. If these are not removed they can girdle the tree, cutting into the trunk and eventually killing the tree.

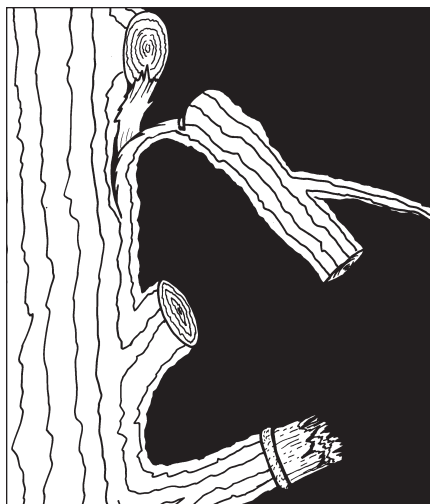
## Maintenance

For the first year or two, especially after a week or so of especially hot or dry weather, watch your trees closely for signs of moisture stress. If you see leaf wilting or hard, caked soil, water the trees well and slowly enough to allow the water to soak in. This will encourage deep root growth. Keep the area under the trees mulched.

Some species of evergreen trees may need protection against winter sun and wind. A thorough watering in the fall before the ground freezes is recommended. Spray solutions are available to help prevent drying of foliage during the winter.

Fertilization is usually not needed for newly planted trees. Depending on soil and growing conditions, fertilizer may be beneficial at a later time.

Young trees need protection against rodents, frost cracks, sunscald, and lawn mowers and weed whackers. Mice and rabbits frequently girdle small trees by chewing away the bark at snow level. Since the tissues that transport nutrients in the tree are located just under the bark, a girdled tree often dies in the spring when growth resumes. Weed whackers are also a common cause of girdling. Plastic guards are an inexpensive and easy control method. Frost cracking is caused by the sunny side of the tree expanding at a different rate than the colder shaded side. This can cause large splits in the trunk. Sunscald can occur when a young tree is suddenly moved from a shady spot into direct sun. Light colored tree wraps can be used to protect the trunk from sunscald.



*Improper pruning: Cuts from the top in one operation can tear at the bark. A sloped cut will gather water and decay. A decaying stub that's irregular won't callous over well.*

## Pruning

Usually, pruning is not needed on newly planted trees. As the tree grows, lower branches may be pruned to provide clearance above the ground, or to remove dead or damaged limbs or suckers that sprout from the trunk. Sometimes larger trees need pruning to allow more light to enter the canopy. Small branches can be removed easily with pruners. Large branches should be removed with a pruning saw. All cuts should be vertical. This will allow the tree to heal quickly without the use of sealants. Major pruning should be done in late winter or early spring. At this time the tree is more likely to "bleed" as sap is rising through the plant. This is actually healthy and will help prevent invasion by many disease organisms. Heavy pruning in the late summer or fall may reduce the tree's winter hardiness. Removal of large branches can be hazardous. If in doubt about your ability to prune properly, contact a professional with the proper equipment.

Under no circumstance should trees be topped. Not only does this prac-



*Proper pruning: A ring of callous (top) will form over a good vertical cut. First cut away the limb to remove the weight, making initial cuts from the bottom. Then cut the stub from below.*

tice ruin the natural shape of the tree, but it increases susceptibility to diseases and results in very narrow crotch angles, the angle between the trunk and the side branch. Narrow crotch angles are weaker than wide ones and more susceptible to damage from wind and ice. If a large tree requires major reduction in height or size, contact a professionally trained arborist. There are other methods to selectively remove large branches without sacrificing the health or beauty of the tree.

## On the farm

Windbreaks and tree plantings slow the wind and provide shelter and food for wildlife. Trees can shelter livestock and crops; they are used as barriers to slow winds that blow across large cropped fields and through farmsteads. Windbreaks can be beneficial in reducing blowing and drifting snow along roadways. Farmstead and field windbreaks and tree plantings are key components of a conservation system. They also help prevent dust particles from adding to smog over urban areas.